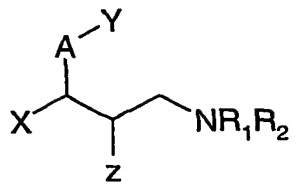
Claims

1. A compound of formula I:



I

wherein

A is selected from O and S;

X is selected from

phenyl optionally substituted with up to 5 substituents each independently selected from halo, C_1-C_4 alkyl and C_1-C_4 alkoxy;

thienyl optionally substituted with up to 3 substituents each independently selected from halo and C_1-C_4 alkyl; and

C_2-C_8 alkyl, C_2-C_8 alkenyl, C_3-C_8 cycloalkyl and C_4-C_8 cycloalkylalkyl, each of which may be optionally substituted with up to 3 substituents each independently selected from halo, C_1-C_4 alkyl, C_1-C_4 alkoxy, C_1-C_4 alkyl-S(O)n- where n is 0, 1 or 2, $-CF_3$, -CN and $-CONH_2$;

Y is selected from dihydrobenzothienyl, benzothiazolyl, benzoisothiazolyl, quinolyl, isoquinolyl, naphthyridyl, and thienopyridyl, each of which may be optionally substituted with up to 4 or, where possible, up to 5 substituents each independently selected from halo, C_1-C_4 alkyl, C_1-C_4 alkoxy, C_1-C_4 alkyl-$S(O)_n$- where n is 0, 1 or 2, nitro, acetyl, $-CF_3$, $-SCF_3$ and cyano;

Z is selected from H, OR_3 or F, wherein R_3 is selected from H, C_1-C_6 alkyl and phenyl C_1-C_6 alkyl;

R_1 and R_2 are each independently H or C_1-C_4 alkyl;

or pharmaceutically acceptable salt thereof.

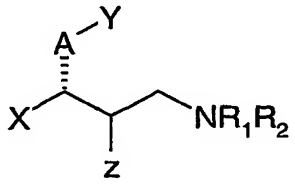
2. A compound as claimed in claim 1, wherein A is O.

3. A compound as claimed in claim 1, wherein A is S.

4. A compound as claimed in any one of the preceding claims, wherein one of R_1 and R_2 is H.

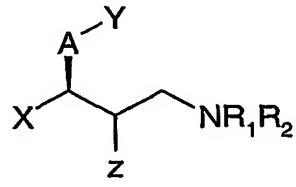
5. A compounds as claimed in any one of the preceding claims, wherein one of R_1 and R_2 is H and the other is methyl.

6. A compound as claimed in any one of the preceding claims, wherein the compound possesses the stereochemistry defined in formula II



II

7. A compound as claimed in claim 6, wherein the compound possesses the stereochemistry defined in formula III



III

8. A compound as claimed in any one of the preceding claims wherein Z is H.

9. A compound as claimed in any one of the preceding claims, wherein

X is unsubstituted phenyl or phenyl which is mono-, di- or tri-substituted with substituents independently selected from halo, C_1-C_4 alkyl and C_1-C_4 alkoxy.

10. A compound as claimed in claim 9, wherein X is unsubstituted phenyl or phenyl which is mono-substituted with fluorine.

11. A compound as claimed in any one of the preceding claims, wherein Y is dihydrobenzothienyl optionally substituted with up to 5 substituents each independently selected from halo, C_1-C_4 alkyl, C_1-C_4 alkoxy, C_1-C_4 alkyl-$S(O)_n$- where n is 0, 1 or 2, nitro, acetyl, -CF_3, -SCF_3 and cyano.

12. A compound as claimed in claim 11, wherein Y is unsubstituted dihydrobenzothienyl or dihydrobenzothienyl which is mono-substituted with fluorine.

13. A compound as claimed in any one of the claims 1-10, wherein Y is benzothiazolyl or benzoisothiazolyl, each of which may be optionally substituted with up to 4 substituents each independently selected from halo, C_1-C_4 alkyl, C_1-C_4 alkoxy, C_1-C_4 alkyl-$S(O)_n$- where n is 0, 1 or 2, nitro, acetyl, -CF_3, -SCF_3 and cyano.

14. A compound as claimed in claim 13, wherein Y is unsubstituted benzothiazolyl, unsubstituted benzoisothiazolyl, benzothiazolyl which is mono-substituted with CH_3 or benzoisothiazolyl which is mono-substituted with CH_3.

15. A compound as claimed in any one of the claims 1-10, wherein Y is thienopyridyl optionally substituted with up to 4 substituents each independently selected from halo, C_1-C_4 alkyl, C_1-C_4 alkoxy, C_1-C_4 alkyl-$S(O)_n$- where n is 0, 1 or 2, nitro, acetyl, -CF_3, -SCF_3 and cyano.

16. A compound as claimed in any one of claims 11-15, wherein the point of attachment of the group Y to the O or S atom is attachment at the 7 position.

17. A compound as claimed in any one of claims 11-15, wherein the point of attachment of the group Y to the O or S atom is attachment at the 4 position.

18. A compound as claimed in any one of the claims 1-10, wherein Y is quinolyl, isoquinolyl or naphthyridyl, each of which may be optionally substituted with up to 5 substituents each independently selected from halo, C_1-C_4 alkyl, C_1-C_4 alkoxy, C_1-C_4 alkyl-$S(O)_n$- where n is 0, 1 or 2, nitro, acetyl, $-CF_3$, $-SCF_3$ and cyano.

19. A compound as claimed in claim 18, wherein the point of attachment of the group Y to the O or S atom is attachment at the 4 position.

20. A compound as claimed in claim 18, wherein the point of attachment of the group Y to the O or S atom is attachment at the 5 position.

21. A compound as claimed in claim 18, wherein the point of attachment of the group Y to the O or S atom is attachment at the 6 position.

22. A pharmaceutical composition comprising a compound of formula I or a pharmaceutically acceptable salt thereof, as defined in any one of claims 1-21, together with a pharmaceutically acceptable diluent or carrier.

23. A compound of formula I or a pharmaceutically acceptable salt thereof, as defined in any one of claims 1-21, for use as a pharmaceutical.

24. A compound of formula I or a pharmaceutically acceptable salt thereof, as defined in any one of claims 1-21, for use as a selective inhibitor of the reuptake of both serotonin and norepinephrine.

25. A compound of formula I or a pharmaceutically acceptable salt thereof, as defined in any one of claims 1-21, for use in the treatment of a disorder associated with serotonin and norepinephrine dysfunction in mammals.

26. A compound of formula I or a pharmaceutically acceptable salt thereof, as defined in any one of claims 1-21, for use in the treatment of a disorder selected from selected from depression, OCD, anxiety, memory loss, urinary incontinence, conduct disorders, ADHD, obesity, alcoholism, smoking cessation, hot flushes/flashes and pain.

27. The use of a compound of formula I or a pharmaceutically acceptable salt thereof, as defined in any one of claims 1-21, for the manufacture of a medicament for selectively inhibiting the reuptake of serotonin and norepinephrine.

28. The use of a compound of formula I or a pharmaceutically acceptable salt thereof, as defined in any one of claims 1-21, for the manufacture of a medicament for the treatment of a disorder associated with serotonin and norepinephrine dysfunction in mammals.

29. The use as claimed in claim 28, wherein the disorder is selected from depression, OCD, anxiety, memory loss, urinary incontinence, conduct disorders, ADHD, obesity, alcoholism, smoking cessation, hot flushes/flashes and pain.

30. The use as claimed in claim 29, wherein the disorder is selected from depression, urinary incontinence and pain.

31. The use as claimed in any one of claims 28-30, wherein the disorder is pain.

32. A method for selectively inhibiting the reuptake of serotonin and norepinephrine in mammals, comprising administering to a patient in need thereof an effective amount of a compound of formula I or a pharmaceutically acceptable salt thereof, as defined in any one of claims 1-21.

33. A method for treating disorders associated with serotonin and norepinephrine dysfunction in mammals, comprising administering to a patient in need thereof an effective amount of a compound of formula I or a pharmaceutically acceptable salt thereof, as defined in any one of claims 1-21.

34. A method as claimed in claim 33, wherein the disorder is selected from depression, OCD, anxiety, memory loss, urinary incontinence, conduct disorders, ADHD, obesity, alcoholism, smoking cessation, hot flushes/flashes and pain.

35. A method as claimed in claim 33 or 34, wherein the disorder is pain.